



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/916,256	07/30/2001	Wayne Lee Borgen	8200.495	8665

7590 12/12/2002

Matthew W. Stavish, Esq.
Liniak, Berenate, Longacre and White
6550 Rock Spring Dr. # 240
Bethesda, MD 20817

EXAMINER

YEAGLEY, DANIEL S

ART UNIT	PAPER NUMBER
----------	--------------

3611

DATE MAILED: 12/12/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/916,256

Applicant(s)

BORGEN ET AL.

Examiner

Daniel Yeagley

Art Unit

3611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 September 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 9 and 19-21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 10-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 July 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

Art Unit: 3611

DETAILED ACTION

1. The IDS filed 8/13/01 has been acknowledged.

Election/Restrictions

2. Applicant's election of invention I; Species A in Paper No. 4 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)). The examiner further acknowledges applicants' intention that claims 1-6 and 10-18 are generic to both species.

Drawings

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: numeral "32" cited on page 7. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

4. Claims 9, 11 and 12 are objected to because of the following informalities: the terminology used in the claims should be consistent with the terms cited in the specification; note that the term "ring" in claims 11 and 12 was disclosed in the specification as a gear ring (not shown) and affixed to the differential case, not the axle shaft as claimed but for examination purposes was read as the --clutch collar (36)-- and Claim 9 the term "interconnecting collar" is not consistent with the terminology used the specification; such as --linking member-- or --connecting sleeve--.

Art Unit: 3611

Claim 6 is objected to because of the phrase “interconnecting member interconnecting said first and second axle shafts to translate in simultaneously along said transverse axis” appears to be incomplete phrase. Appropriate corrections are required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-8 and 10-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims are redundant with terms that lack sufficient antecedent basis;

a few examples are:

- ✓ Claim 1, line 3, recites “a second drive train” (8) which lacks antecedent basis because a first drive train has not been recited.
- ✓ Claim 4, lines 3 - 4, it is unclear if the terms “first and second axle shafts” are reciting the same axle shafts already recited in claim 1, line 6; “axle shafts” (24, 25) of the second drive axle (7) from differential assembly (8).
- ✓ Claim 5, line 1-2, the term “said first and second axle shafts” lacks antecedent basis.
- ✓ Claim 5, line 4, the term “said first and second side gears” lacks antecedent basis.

Applicant should thoroughly review all the claims for additional errors.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 1 – 8 and 10 – 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Balmforth '979 in view of Hunt '720.

Balmforth discloses a multiple disconnect system in which a vehicle drive assembly comprises primary rear drive axle and an auxiliary rear prop shaft to a second drive axle of a tandem vehicle comprising a first drive axle 70, a second drive axle having axle shafts 105,106 driven a second drive train as shown in figure 7, a first clutch assembly 73 selectively engaging and disengaging the second drive train as shown in figure 1, wherein the differential assembly best shown in figure 2 comprises pinion gears 68, cross pin 67, side gears 69, axle shafts 70 and includes a second clutch means as shown in figure 7 which engages and disengages the axle shafts 111,112 of a third drive axle from a differential assembly but lacked the second clutch

Art Unit: 3611

engaging and disengaging the axle shafts 105 and 106 of the second drive axle that are axially slidable as claimed.

Hunt however shows a dual disconnect system in a drive assembly that teaches the art of incorporating clutch means that are axially slidable in the differential assembly to engage and disengage the axle shafts of the first or second drive axle of a motor vehicle (Figure 1, column 1 – 5); such like that as claimed by applicants, wherein the first and second axle shafts and side gears are axially slidable on surfaces of complementary splines 22,23,31 (pairs of axial spaced rows of gear teeth; figure 5, column 3) and interconnected by a interconnecting member (rod 34) which passes through the cross pin 16 (figure 4) and extends from the inboard ends of the axle shafts 24 (figure 1) to translate simultaneous axial movement along a transverse axis by first and second clutch members (splines 22,23 and 31), and further reveals the prior art of a ring (clutch collar 36) mounted on one of the axle shafts, actuator which includes an arm for engaging the ring 40 for slidably moving the shafts between clutch engaging and disengaging positions by a compression spring 42 .

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the multiply disconnect system of Balmforth tandem driven vehicle with an alternative clutch driven drive assembly such as disclosed by Hunt to incorporate an enhanced disconnect mechanism into the drive assembly to reap the advantages disclosed by the Hunt drive assembly with disconnect means having a clutch means which engage and disengage the output shafts of the drive axles to avoid the disadvantages of a single shaft disconnect mechanism to reduce back drive thereby reducing noise and wear of differential parts as taught by Hunt

Art Unit: 3611

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Nelson et al '534, Lobo et al '752, Mueller '600, Crispen '341 IDS references Christie '128, Campbell '722, Kurihara et al ' 192 and Schlosser '389 show various differential drive assemblies.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel Yeagley whose telephone number is 703-305-0838. The examiner can normally be reached on Mon. - Fri; first Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lesley D Morris can be reached on 703-308-0629. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9326 for regular communications and 703-872-9327 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.

Lesley D Morris
Lesley D. Morris
~~Primary Examiner~~
SPE AU 3611

D.Y.
December 9, 2002